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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,470	04/21/2004	Tomotoshi Kanatsu	00862.023668.	5344

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EXAMINER	
LOVEL, KIMBERLY M	
ART UNIT	**PAPER NUMBER**
2167	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/828,470	KANATSU, TOMOTOSHI	
	Examiner	Art Unit	
	Kimberly Lovel	2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8,10 and 12-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8, 10 and 12-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is in response to the Amendment filed 5 January 2007.

2. Claims 1-8, 10 and 12-18 are pending in this application. Claims 1, 16, 17 and 18 are independent. In the Amendment filed 5 January 2007, claims 1-6, 10 and 12-18 were amended and claims 9 and 11 were canceled. This action is made Final.

Claim Rejections - 35 USC § 101

3. The rejections of claims 1-16 under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter have been withdrawn as necessitated by amendment.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-5, 7, 9-13 and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No 5,911,139 to Jain et al (hereafter Jain et al) in view of US Patent No 6,91,463 to Loui et al (hereafter Loui).

Referring to claim 1, Jain et al discloses an image processing method implemented by a computer for selectively storing an input image in a database, comprising the steps of:

(a) acquiring first search information [alpha-numeric query] associated with the input image on the basis of information input by a user (see column 9, lines 11-15);

(b) acquiring feature data [feature vector] contained in the input image as second search information (see column 9, lines 45-48);

(c) searching for an image file corresponding to the input image in the database by using the first [alpha-numeric query] and second [feature vector] search information (see column 9, lines 52-67); and

(d) converting the input image into vector data and storing the vector data in the database [database 132] (Jain: see column 9, lines 40-52).

However, Jain et al fails to explicitly disclose the further limitation of (d) wherein the image is only stored in a case where the image file corresponding to the input is not found in said step (c); and (e) declining to store the input image data into the database, in a case that the image file corresponding to the input image is found in said step (c). Loui discloses a duplicate detection algorithm to determine whether two pictures are so similar that a consumer would only put one of them in the album [database], including the further limitations of wherein the image is only stored in a case where the image file corresponding to the input is not found in said step (c); and (e) declining to store the input image data into the database, in a case that the image file corresponding to the

input image is found in said step (c) (see column 4, lines 11-51) since the concept of storing only one copy of an image increases storage efficiency and search efficiency.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the duplicate detection algorithm of Loui with the storage system of Jain. One would have been motivated to do since the methodology of Loui can be embodied in any different types of systems (Loui: see column 7, lines 13-24) and since the concept of storing only one copy of an image increases storage efficiency and search efficiency.

Referring to claim 2, the combination of Jain et al and Loui (hereafter Jain/Loui) discloses the method according to claim 1, further comprising the step of: (f) registering the first search information as an index [index value] for searching for the image file in an index file (Jain: see column 7, lines 27-32).

Referring to claim 3, Jain/Loui discloses the method according to claim 1, wherein the first search information comprises a keyword [keywords] for searching using the input image (Jain: see Fig 3, item 201 and column 9, lines 11-15).

Referring to claim 4, Jain/Loui discloses the method according to claim 1, wherein the first search information comprises a data size [file size] of the image file (Jain: see Fig 3, item 201 and column 9, lines 11-15).

Referring to claim 5, Jain et al discloses the method according to claim 1, wherein the first search information comprises date information [File Date] of the image file (Jain: see Fig 3, item 201 and column 9, lines 11-15).

Referring to claim 7, Jain/Loui discloses the method according to claim 1, wherein the second search information comprises a character code of a character recognition [face recognition] result which is obtained by performing a character recognition process with respect to a character region in the input image (Jain: see column 25, lines 31-41).

Referring to claim 10, Jain/Loui discloses the method according to claim 1, further comprising the step of: (f) converting the input image, which has been converted into the vector data, into data in a format which can be handled by application software (Jain: see column 31, lines 12-14).

Referring to claim 12, Jain/Loui discloses the method according to claim 10, further comprising the step of: (g) registering the first search information, in an index file, as an index [index value] for searching for an image represented by the vector data stored in the database in the step (d) (Jain: see column 7, lines 27-32).

Referring to claim 13, Jain/Loui discloses the method according to claim 1, further comprising the step of: (f) outputting the image file, wherein pointer information is added to the image file (Jain: see column 14, lines 7-19).

Referring to claim 15, Jain/Loui discloses the method according to claim 1, wherein in the step (c), the image file is searched for by using at least one of keyword search [keywords], full-text search, and layout search (see Fig 3, item 201 and column 9, lines 11-15).

Referring to claim 16, Jain et al discloses an image processing system selectively stores an image file corresponding to an input image, comprising:

an input unit constructed to input acquiring first search information [alpha-numeric query] associated with the input image (see column 9, lines 11-15);

a unit constructed to search for acquiring feature data [feature vector] contained in the input image as second search information (see column 9, lines 45-48);

a search unit constructed to search for an image file corresponding to the input image in a database by using the first [alpha-numeric query] and second [feature vector] search information (see column 9, lines 52-67); and

a unit constructed to convert the input image into vector data and to store the vector data in the database [database 132] (Jain: see column 9, lines 40-52).

However, Jain et al fails to explicitly disclose the further limitation of wherein the image is only stored in a case where the image file corresponding to the input is not found by said search unit; and a unit constructed to decline storing the input image data into the database, in a case that the image file corresponding to the input image file is found by said search unit. Loui discloses a duplicate detection algorithm to determine whether two pictures are so similar that a consumer would only put one of them in the album [database], including the further limitations of wherein the image is only stored in a case where no image file corresponding to the input image is found by said search unit; and a unit constructed to decline storing the input image data into the database, in a case that the image file corresponding to the input image file is found by said search unit (see column 4, lines 11-51) since the concept of storing only one copy of an image increases storage efficiency and search efficiency.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the duplicate detection algorithm of Loui with the storage system of Jain. One would have been motivated to do since the methodology of Loui can be embodied in any different types of systems (Loui: see column 7, lines 13-24) and since the concept of storing only one copy of an image increases storage efficiency and search efficiency.

Referring to claim 17, Jain et al discloses a computer executable program stored on a computer-readable medium for selectively storing an image file corresponding to an input image, comprising:

code [alpha-numeric query input module 106] for acquiring first search information [alpha-numeric query] associated with the input image on the basis of information input by a user (see column 9, lines 11-15);

code [Query Canvas module 108 or Image Browsing Module 110] for acquiring feature data [feature vector] contained in the input image as second search information (see column 9, lines 45-48);

code [VIR Engine 120 comprises modules] for searching for an image file corresponding to the input image in a database by using the first [alpha-numeric query] and second [feature vector] search information (see column 9, lines 40-41 and 52-67); and

code for converting the input image into vector data and to store the vector data in the database [database 132] (Jain: see column 9, lines 40-52).

However, Jain et al fails to explicitly disclose the further limitation of wherein the image is only stored in a case where the image file corresponding to the input is not found by said search unit; and code for declining storing the input image data into the database, in a case that the image file corresponding to the input image file is found by said search unit. Loui discloses a duplicate detection algorithm to determine whether two pictures are so similar that a consumer would only put one of them in the album [database], including the further limitations of wherein the image is only stored in a case where no image file corresponding to the input image is found by said search unit; and code for declining storing the input image data into the database, in a case that the image file corresponding to the input image file is found by said search unit (see column 4, lines 11-51) since the concept of storing only one copy of an image increases storage efficiency and search efficiency.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the duplicate detection algorithm of Loui with the storage system of Jain. One would have been motivated to do since the methodology of Loui can be embodied in any different types of systems (Loui: see column 7, lines 13-24) and since the concept of storing only one copy of an image increases storage efficiency and search efficiency.

Referring to claim 18, Jain et al discloses a computer-readable medium having a computer executable program stored thereon for search for an original data file corresponding to an input image, the program comprising:

code [alpha-numeric query input module 106] for acquiring first search information [alpha-numeric query] associated with the input image on the basis of information input by a user (see column 9, lines 11-15);

code [Query Canvas module 108 or Image Browsing Module 110] for acquiring feature data [feature vector] contained in the input image as second search information (see column 9, lines 45-48); and

code [VIR Engine 120 comprises modules] for searching for an original data file corresponding to the input image by using the first [alpha-numeric query] and second [feature vector] search information (see column 9, lines 40-41 and 52-67); and

code for converting the input image into vector data and to store the vector data in the database [database 132] (Jain: see column 9, lines 40-52).

However, Jain et al fails to explicitly disclose the further limitation of wherein the image is only stored in a case where the image file corresponding to the input is not found by said search unit; and code for declining storing the input image data into the database, in a case that the image file corresponding to the input image file is found by said search unit. Loui discloses a duplicate detection algorithm to determine whether two pictures are so similar that a consumer would only put one of them in the album [database], including the further limitations of wherein the image is only stored in a case where no image file corresponding to the input image is found by said search unit; and code for declining storing the input image data into the database, in a case that the image file corresponding to the input image file is found by said search unit (see column

4, lines 11-51) since the concept of storing only one copy of an image increases storage efficiency and search efficiency.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the duplicate detection algorithm of Loui with the storage system of Jain. One would have been motivated to do since the methodology of Loui can be embodied in any different types of systems (Loui: see column 7, lines 13-24) and since the concept of storing only one copy of an image increases storage efficiency and search efficiency.

6. Claims 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No 5,911,139 to Jain et al as applied to claim 13 above, and further in view of US Patent No 7,010,144 to Davis et al (hereafter Davis et al).

Referring to claim 6, Jain et al discloses second search information. However, Jain et al fails to explicitly disclose the further limitation wherein the second search information comprises information associated with a storage location of the original data file which is extracted on the basis of pointer information in the input image. Davis et al also disclose second search information (see column 13, lines 5-14), including the further limitation wherein the second search information comprises information associated with a storage location [address] of the original data file which is extracted on the basis of pointer information in the input image (see column 9, lines 1-16) in order to increase the efficiency and accuracy of locating the original data file.

It would have been obvious to one of ordinary skill in the art at the time if the invention to use the feature the second information being associated with an address location as disclosed by Davis et al as the second search information of Jain et al. One would have been motivated to do so in order to increase the efficiency and accuracy of locating the original data file.

Referring to claim 14, Jain et al disclose pointer information. However, Jain et al fail to explicitly disclose the further limitation wherein the pointer information is added as a digital watermark to the original data file. Davis et al also disclose pointer information (see column 14, lines 11-23), including the further limitation wherein the pointer information is added as a digital watermark to the original data file (see column 1, lines 29-35) in order to embed auxiliary data, which may include one or more references, a machine instruction or set of instructions, and other data items about the image into the image.

It would have been obvious to one of ordinary skill in the art at the time if the invention to use the feature of a digital watermark as disclosed by Davis et al as the pointer information of Jain et al. One would have been motivated to do so in order to embed auxiliary data, which may include one or more references, a machine instruction or set of instructions, and other data items about the image into the image.

7. **Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No 5,911,139 to Jain et al as applied to claim 13 above, and further in view of US Patent No 6,941,323 to Galperin (hereafter Galperin).**

Referring to claim 8, Jain et al discloses second search information. However, Jain et al fails to explicitly disclose the further limitation wherein the second search information comprises feature data of each block obtained by region segmentation of the input image. Galperin discloses image comparison and retrieval, including the further limitation wherein the second search information comprises feature data of each block obtained by region segmentation of the input image (see column 14, lines 8-23) in order to obtain feature data characterizing individual portions of the image.

It would have been obvious to one of ordinary skill in the art at the time if the invention to use the feature of obtaining feature data by using segmentation as disclosed by Davis et al as the way in which to retrieve the feature data of Jain et al. One would have been motivated to do so in order to obtain feature data characterizing individual portions of the image.

Response to Arguments

8. Applicant's arguments with respect to claims 1, 16, 17 and 18 on pages 9 and 10 for failing to disclose or suggest the features of (i) converting an input image into vector data and storing the vector data in a database, in a case where an image file corresponding to the input image is not found in the database, and (ii) declining to store input image data into a database, in a case that an image file corresponding to the input image is found in the database have been considered but are moot in view of the new ground(s) of rejection.

9. In regards to applicant's arguments on page 10 concerning the prior art rejection of claims 1, 16, 17 and 18, the applicant states: In particular, the Office Action equates Jain's feature vector with the claimed vector data, and thus apparently asserts that creating and storing the feature vector corresponds to the claimed conversion and storage steps. However, Jain's "feature vector" is simply data describing one or more certain selected characteristics of an image, such as local or global color or texture, rather than a conversion of the actual image data. The feature vector depends on the features selected by the user, and thus may change according to the user's or designer's selection. In contrast, in the present invention, the input image itself is converted to vector data. Thus, Jain is not seen to disclose or suggest converting an input image into vector data, much less doing so in the case that an image file corresponding to the input image is not found in the database. As such, Jain is also not seen to disclose or suggest the feature of storing such vector data in a database.

The examiner respectfully disagrees. Jain creates feature vectors that represent a mathematical characterization of the visual feature (see column 12, lines 30-34). The feature vector is utilized when comparing images using similarity scoring in order to determine whether two images represent a match (see column 6, line 59 – column 7, line 5). Jain also goes on to state that "When analysis module 122 is utilized to insert images into the database 132, the feature vector of the computed primitive data is stored in a data structure 264. Therefore, it is considered that Jain does teach the limitations of converting an input image into vector data and storing the vector data in a database and therefore reads on the following limitation when interpreted in the

broadest sense: "converting the input image into vector data and storing the vector data into the database."

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly Lovel whose telephone number is (571) 272-2750. The examiner can normally be reached on 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kimberly Lovel
Examiner
Art Unit 2167

27 March 2007
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